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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,250	03/14/2001	Osamu Ueno	108910	1313
25944	7590	02/25/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DINH, TUAN T	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/805,250

**Applicant(s)**

UENO ET AL.

**Examiner**

Tuan T Dinh

**Art Unit**

2827

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,8,9 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,8,15-19 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 9,20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.   |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a terminal end, claim 1, line 8”, “power supply and ground regions are formed in the same plane, claims 15, lines 1-2”, “the power...is entirely surrounded by the ground region, claim 22” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

Page 21, line 2, “Characteristic impedance  $Z_e$ ” should be – A characteristic impedance  $Z_e$ —for proper grammar.

Appropriate correction is required.

### ***Claim Objections***

3. Claims 8-9, 19-20 are objected to because of the following informalities:

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Claim 8, lines 1-2, "an impedance" should be change --the impedance-- for proper antecedent basis.

Claim 8, line 2, "a characteristic impedance" should be change --the characteristic impedance--for proper antecedent basis.

Claim 9, line 2, "a characteristic impedance" should be change --the characteristic impedance--for proper antecedent basis.

Claim 19, line 2, "an impedance....a characteristic impedance" should be change --the impedance...the characteristic impedance--for proper antecedent basis.

Claim 20, line 2, "a characteristic impedance" should be change --the characteristic impedance--for proper antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 15-20, 22-24, and 27-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification is silent regarding “a power supply region and a ground region are formed in the same plane” claim 15, lines 1-2” and “the power supply region is entirely surrounded by the ground region, claim 22.” Since, the specification has described the power layer 11 and the ground layer 12 distinct each other and are not formed in the same plane. Also, in page 29, line 21-23 of the specification, the power and ground regions (11, 12) are formed in different layers with a dielectric interposed therebetween. Two different layers are formed on the top and bottom of the dielectric; so that they are not formed in the same plane, and the power region cannot entirely surrounded by the ground region.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 5-6, 8-9, 21, 23, and 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, line 8, it is unclear. What does applicant mean of “a terminal end” applicant should clarify what “a terminal end” intends. Examiner assumes that is “an end of said at least one region.”

Regarding claim 23, it is confuse, the phrase of “the power supply region and the ground region face each other without overlapping” is not understood because in page 29, lines 10-23 that applicant recites the power and ground regions are substantially overlapping. Therefore, it is so contradiction and paradox.

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Examiner assumes that the power and ground regions are face and overlapping each other.

Claim 27 recites the limitation "said terminal end" in lines 2-3. There is improper antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 15-18, 22, 24, and 27-28 insofar as in compliance with 35 USC 112, first and second paragraphs, are rejected under 35 U.S.C. 102(b) as being anticipated by Lockwood et al. (U. S. Patent 5,898,576).

As to claims 15, 22 and 27, Lockwood discloses a circuit board device (30-figure 3, column 4, lines 10-11) as shown in figures 3-13 having a power supply region (32, column 4, line 1) and a ground region (34, column 4, line 1) that are adjacent, wherein, when at least one region of the power supply region (32) and the ground region (34) that are adjacent (column 4, lines 39-40) has a shape that may be considered a track (transmission lines), a terminal element (48, column 4, line 50) having an impedance (R) at is substantially equal to a characteristic impedance ( $Z_0$ ) between said regions is connected between the power supply region and the ground region at an end said at least one region (column 5, lines 20-23).

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As to claim 16, Lockwood discloses a circuit board device as shown in figures 3-13 wherein the terminal element includes a capacitor (48.2, column 5, line 9).

As to claim 17, Lockwood discloses a circuit board device as shown in figures 6-7 wherein the terminal element includes a resistor (48.3) and a capacitor (48.2) which are series-connected.

As to claim 18, Lockwood discloses a circuit board device as shown in figures 3-13 wherein the region that may be considered a track is a shape having a length that is larger than a width.

As to claim 24, Lockwood discloses the power and ground regions in figure 8 having the same shape (column 5, lines 53-54).

As to claim 28, Lockwood discloses an outer periphery of said power and ground regions (32, 34) is free from connection by said terminal element (48), see column 6, lines 13-23, figure 8.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 4-8, 19, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lockwood et al. (U. S. Patent 5,898,576) in view of Nakao et al. (U. S. Patent 5,926,377).

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As to claim 1, Lockwood discloses a circuit board device (30-figure 3, column 4, lines 10-11) as shown in figures 3-13 having a power supply region (32, column 4, line 1) and a ground region (34, column 4, line 1) that are adjacent, wherein,

when at least one region of the power supply region (32) and the ground region (34) that are adjacent (column 4, lines 39-40) has a shape that may be considered a track (transmission lines) having a length that is larger than its width (figures 4-5 show strips 38 or 40, each having length that is larger than its widths 42 or 44),

a terminal element (48, column 4, line 50) having an impedance ( $R$ ) at is substantially equal to a characteristic impedance ( $Z_0$ ) between said regions is connected between the power supply region and the ground region at an end of said at least one region (column 5, lines 20-23).

Lockwood does not disclose the power supply region divided into two or more power supply regions by a slit.

Nakao shows a multiplayer circuit board disclosed in figures 1a-1c comprising a power supply region (2), the power supply region being divided into two or more power supply regions by a slit (7; 9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the slit in the circuit board device of Lockwood, as taught by Nakao, in order to provide an increasing a resonance frequency of a printed circuit board.

As to claim 5, Lockwood discloses a circuit board device as shown in figures 3-13 wherein the terminal element includes a capacitor (48.2, column 5, line 9).



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As to claim 6, Lockwood discloses a circuit board device as shown in figures 6-7 wherein the terminal element includes a resistor (48.3) and a capacitor (48.2) which are series-connected.

Regarding claims 8 and 19, applicant recites in claim 1 sets forth the impedance ( $Z_r$ ) of the terminal element is substantially equal to the characteristic impedance ( $Z_e$ ), so that the mathematical of  $Z_r/Z_e$  is approximate or equal 1. Thus, the  $0.1 \leq (Z_r/Z_e) \leq 10$  when the impedance ( $Z_r$ ) is set (fix) then  $Z_r/Z_e$  would be satisfy in a range of (0.1-10) as taught by Lockwood.

As to claim 25, Lockwood discloses the connection of the terminal element (48) between the power and ground regions at the end of said at least one region.

As to claim 26, Lockwood discloses an outer periphery of said power and ground regions (32, 34) is free from connection by said terminal element (48), see column 6, lines 13-23, figure 8.

### ***Allowable Subject Matter***

10. Claims 9 and 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwane, Kimoshita et al., and Magerlein et al. disclose related art.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 571-272-1929.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinh  
February 17, 2004.

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2/20/04